

VT-SBC35-VOSM255A

Single Board Computer

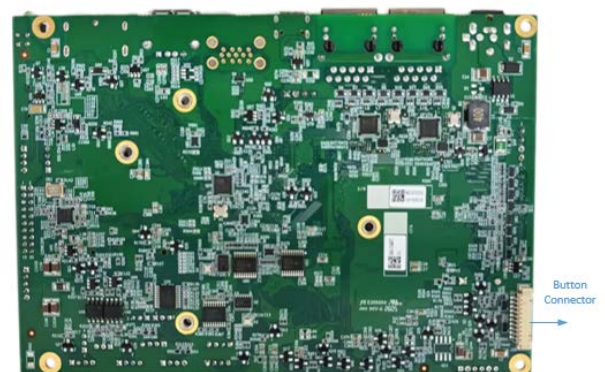
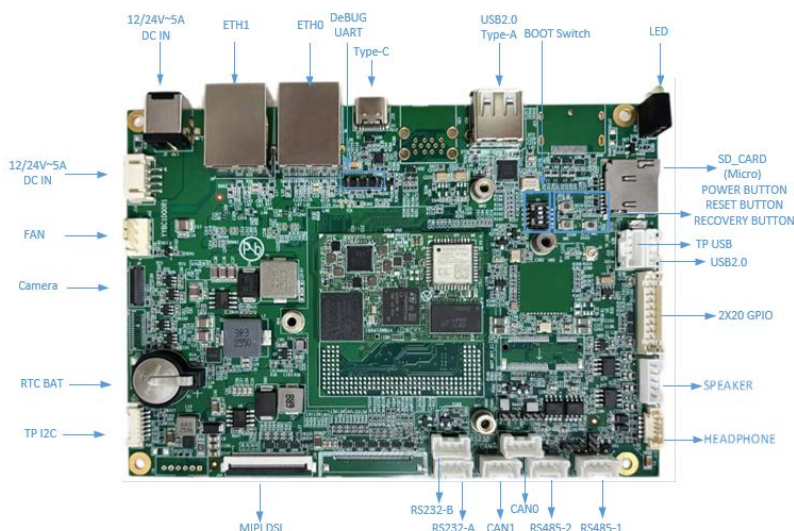


Product Brief

VT-SBC35-VOSM255A Single Board Computer provides a complete, production-ready development ecosystem based on the VOSM255A system-on-module. Designed to accelerate time-to-market, it offers developers a fully integrated platform with standard connectors, robust power management, and signal protection—eliminating common hardware integration hurdles and ensuring reliable operation.

Powered by the STM32MP255A heterogeneous multi-core processor, it adopts a three-tier computing architecture that optimally balances performance, hard real-time determinism and low-power operation. The dual-core 1.5 GHz Cortex-A35 handles high-load workloads including edge-AI inference and multimedia processing; the Cortex-M33 undertakes time-critical deterministic real-time tasks; the Cortex-M0+ governs peripheral subsystems for ultra-low-power standby modes. It integrates 1 GB on-board LPDDR4 RAM and 32 GB eMMC 5.1 storage, supports MIPI-DSI display output as well as 1080p@60fps hardware video encoding and decoding. On-board connectivity includes Wi-Fi, Bluetooth and Gigabit Ethernet, together with rich expansion interfaces: USB, M.2, CAN, GPIO, multi-channel UART and audio interfaces, making it an ideal choice for industrial HMIs, autonomous edge gateways, medical diagnostic devices, smart factory controllers, and predictive monitoring systems.

Exterior and Features



STM32MP255A dual-core Arm Cortex-A35 processor



1 GB LPDDR4, 32 GB eMMC 5.1



Up to 1.2 TOPS NPU for lightweight edge AI inference



1080P@60fps H.264/VP8 video codec



Rich interfaces, robust system performance

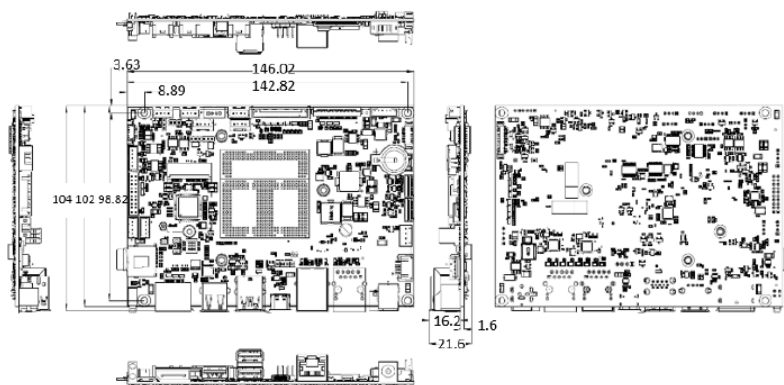


ETH, Wi-Fi & BT connectivity

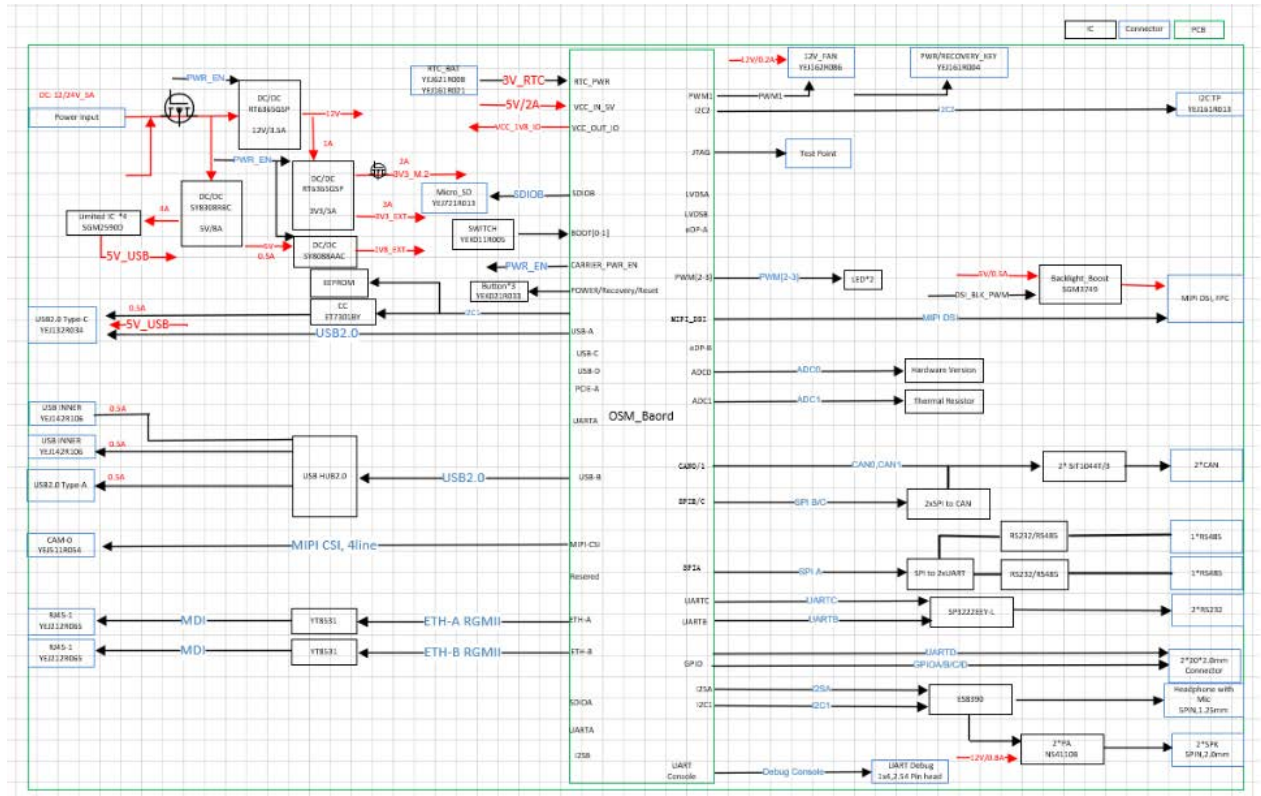
Specifications

VT-SBC35-VOSM255A			
System	CPU	STMicroelectronics STM32MP255A dual-core Arm Cortex-A35 processor, 1.5GHz	
	MCU	1 x Arm Cortex-M33 RISC core with FPU/MPU, 400 MHz	
		1 x Arm Cortex-M0+ RISC core in the SmartRun domain, 200 MHz	
	GPU	VeriSilicon GC8000UL, 800 MHz, supports OpenGL ES 3.1, Vulkan 1.3, OpenCL 3.0, OpenVX 1.3	
	NPU	VeriSilicon GC8000UL, 800 MHz, up to 1.2 TOPS, supports TensorFlowLite, ONNX, Linux NN	
	Memory	1GB LPDDR4	
	Storage	32GB eMMC 5.1	
Communication	Ethernet	2 x RJ45, 10/100/1000Mbps	
	Wi-Fi & Bluetooth	Wi-Fi 802.11 a/b/g/n/ac/ax + Bluetooth 5.4	
Media	Video processing	1080P@60fps H.264/VP8 video codec	
	Image processing	ISP embedded inside DCMIPP (all MIPI CSI-2 v1.3: RGB565, 888, YUV422, RawBayer)	
I/O	Display	1 x 4-lane MIPI DSI D-PHY (up to 2.5 Gbit/s each), up to 2048 × 1536@60Hz	
	Camera	1 x 4-lane MIPI CSI	
	Audio	1 x HP + mic combo header	1 x Speaker connector
	TP	1 x I2C TP connector	2 x USB2.0 TP connector
	USB	1 x USB2.0 Type-A	1 x USB Type-C (USB 2.0 OTG)
		2 x USB wafer (muxed as TP connectors)	
	Serial port	2 x RS232	2 x RS485
	Debug UART	1 x Debug UART	
	CAN	2 x CAN FD	
	GPIO	2 x GPIO expansion header, including 8 x GPIO, with 3.3V power supply	
	SD slot	1 x Micro SD slot	
	Button	1 x Power button	1 x Reset button
		1 x Recovery button	1 x 10-pin button connector
	Indicator	1 x Power LED	1 x System status LED (user-defined)
	Fan	1 x Fan connector	
	RTC	1 x Cell battery holder (1225)	
Power	Input	12~24V DC input	1 x 5.5 x 2.5mm power jack; 1 x 4 x 2.0mm power connector
Software	Operating system	Linux Yocto	
Mechanical	Dimensions	149.65mm x 104mm x 21.6mm (SBC)	45mm x 30mm (SoM)
Environmental Conditions	Temperature	Operating: -20°C ~ +70°C	Storage: -40°C ~ +80°C
	Humidity	5%~ 95% RH (Non-condensing)	

Product Outlines



Block Diagram



Ordering Information

Ordering No.	Chipset	Memory	Storage	Description
VT-SBC35-VOSM255A	STM32MP255A	8GB LPDDR5	32GB eMMC 5.1	VOSM255A + Carrier board (MIPI DSI, MIPI CSI, UART, USB, CAN, GPIO)

Packing List				
VT-SBC35-VOSM255A Single Board Computer	1	12V power adapter	1	

Since its establishment in 2002 by two Silicon Valley entrepreneurs, Vantron Technology has been at the forefront of the connected IoT devices and IoT platform solutions. Today, Vantron boasts a global customer base that includes many Fortune Global 500 companies. Its product lines cover edge intelligent hardware, IoT communication devices, industrial displays, and BlueSphere cloud platforms.

With over 20 years of experience in R&D of intelligent edge hardware, Vantron has provided users with diverse embedded solutions featuring ARM and X86 architectures. Its offerings range from Linux, Android to Windows, from embedded to desktop level, and from gateways to servers. In addition, it provides users with system trimming, driver transplantation and more to cater to the unique needs of its users.